COSEWIC
Status Appraisal Summary

on the

Spotted Sucker
Minytrema melanops

in Canada

SPECIAL CONCERN
2014

COSEWIC
Committee on the Status
of Endangered Wildlife
in Canada

COSEPAC
Comité sur la situation
des espèces en péril
au Canada

COSEWIC status appraisal summaries are working documents used in assigning the status of wildlife species suspected of being at risk in Canada. This document may be cited as follows:

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COSEWIC
Assessment Summary

Assessment Summary – November 2014

Common name
Spotted Sucker

Scientific name
Minytrema melanops

Status
Special Concern

Reason for designation
This species is a relatively rare fish that inhabits lakes and rivers in southwestern Ontario. Its spatial distribution has remained relatively constant in these environments but there are indications that occurrence has declined in the Lake Erie part of its range. Specific threats are poorly understood, but the species is likely sensitive to high turbidity, which is common in the degraded environments it inhabits. The species may become Threatened if factors suspected of negatively influencing its persistence are neither reversed nor managed effectively.

Occurrence
Ontario

Status history
Designated Special Concern in April 1983. Status re-examined and confirmed in April 1994, November 2001, May 2005, and November 2014.

COSEWIC
Status Appraisal Summary

Current COSEWIC Assessment:

Designated Special Concern in April 1983. Status re-examined and confirmed in April 1994, November 2001, May 2005, and November 2014.

Evidence (indicate as applicable):

Wildlife species:

Change in eligibility, taxonomy or designatable units: yes ☐ no ☒

Explanation:

No new data to support a change.

Range:

Change in extent of occurrence (EO): yes ☒ no ☐ unk ☐

Change in index of area of occupancy (IAO): yes ☒ no ☐ unk ☐

Change in number of known or inferred current locations*: yes ☐ no ☐ unk ☒

Significant new survey information: yes ☒ no ☐

Explanation:

The extent of occurrence has decreased since 2003 relative to the 10 years prior to the last status report, and to the historical range (Figure 1). The index of area occupancy since 2003 is about the same as in the 10 years prior to the last status report, but is lower than the historical range (Figures 2, 3, 4).

As the most plausible threat is not clear, the number of locations cannot be determined.

Spotted Sucker is still known from 7 of 11 historical subpopulations in Canada, but specimens have not been collected from 5 historical subpopulations since 2003. The specimens collected in Maxwell (1996), Bear (1997), and Little Bear (2014) creeks, which drain through the same watershed directly into the Chenal Ecarte, should be considered a 12th subpopulation.

The Lake Erie subpopulations (western basin, central basin) have been sampled regularly using the same effort and gear as in the previous 10 years, but two of the Essex County subpopulations (Cedar Creek, Pike Creek) have not been well sampled in the vicinity of the historical records in the last 10 years.

The St. Clair River, Detroit River, Canard River, and the near shore of Lake St. Clair and its tributary mouths have been well-sampled by Fisheries and Oceans Canada (DFO) and the Ontario Ministry of Natural Resources and Forestry (OMNRF) since 2003.

The Sydenham River was last intensively sampled in 2003; limited sampling since then may explain the lack

of recent records in the Sydenham watershed.

The Thames River has been well-sampled since 2003 by DFO and OMNRF. The recent occurrence at Springbank Dam in London indicates that the species is still using the river.

Population Information:

Change in number of mature individuals:	yes ☐ no ☐ unk ☒
Change in population trend:	yes ☐ no ☐ unk ☒
Change in severity of population fragmentation:	yes ☐ no ☒ unk ☐
Change in trend in area and/or quality of habitat:	yes ☐ no ☒ unk ☐
Significant new survey information:	yes ☒ no ☐

Explanation:

Spotted Sucker is uncommon in catches and, if caught, is typically few in number; therefore, there are no data on population size or trends.

There has been no change in the severity of fragmentation of populations – the Canadian population is not fragmented.

There has been little change in the amount or quality of habitat as most of the habitat is already degraded, particularly in systems that also function as agricultural drains.

Most new information on Spotted Sucker distribution is from fish community sampling undertaken by DFO and OMNRF. Sampling supported a variety of management objectives (*e.g.* Area of Concern (AOC) monitoring, Asian Carp surveillance, and fishes-at-risk inventories). A broad range of gear types were used: bag seine, backpack electrofisher, boat electrofisher, fyke-net, hoop-net, trap-net, and trawl. Descriptions of sampling activities can be found in Dextrase *et al.* 2014, Edwards and Mandrak (2006), Edwards *et al.* (2006), Marson *et al.* 2012, Reid and Mandrak (2006), Reid and Hogg (2014) and Wilson *et al.* (2014). In Lake Erie, the fish community is sampled annually through the Partnership gill net survey (OMNRF and Ontario Commercial Fisheries' Association) and the Interagency trawling survey in the western basin (OMNRF and Ohio Division of Wildlife).

The only targeted sampling for Spotted Sucker was undertaken by OMNRF in June 2014, when 14 sites along the Canard and Belle rivers were sampled with a backpack electrofisher (S. Reid, personal communication).

Threats:

Change in nature and/or severity of threats:	yes ☐ no ☒ unk ☐

Explanation:

Turbidity and dams were identified as the primary threats in the last status report. As there are few dams within its Canadian range, dams are not a threat to Spotted Sucker in Canada. Turbidity has neither changed nor been alleviated in the Canadian range of Spotted Sucker.

Protection:

Change in effective protection:	yes ☒ no ☐

Explanation:

The federal *Fisheries Act* once represented an important piece of legislation in the direct protection of Spotted Sucker habitat. Recent changes to the *Fisheries Act* have altered the protection of Spotted Sucker habitat to allow for protection only in areas where a commercial, recreational, or Aboriginal fishery of importance is present. Distributional overlap between Spotted Sucker and various commercial and recreational fisheries species does exist, resulting in application of the new *Fisheries Act* to all locations that Spotted Sucker currently occupy.

Rescue Effect:

Change in evidence of rescue effect: yes ☐ no ☒

Explanation:

Rescue from bordering states of the USA is still possible. There has been no change in conservation status in Michigan (S3). The conservation status in Ohio has changed to S4. Note that the Ohio status would include consideration of the species in the Mississippi basin, where it is more common.

Quantitative Analysis:

Change in estimated probability of extirpation: yes ☐ no ☐ unk ☒

Details:

Data not available.

Summary and Additional Considerations: [e.g., recovery efforts]

Recovery efforts since 2005:

A SARA management plan was developed for Spotted Sucker in 2009, with the main goal being to prevent this species of Special Concern from becoming Threatened or Endangered. Specific habitat requirements are outlined, as are threats to the species and its habitat, and actions to be taken (Edwards and Staton 2009).

There have been no conservation efforts specifically targeting Spotted Sucker; however, some populations of Spotted Sucker may have indirectly benefited from conservation efforts funded through the Ontario Species at Risk Stewardship Fund (the species was listed on 9 projects; 2007-2014), Federal Habitat Stewardship Fund and Great Lakes Action Plan.

Acknowledgements and authorities contacted:

DFO Ontario: Andrew Doolittle

OMNRF: Scott Reid, Tom MacDougall, Andy Todd, Megan Belore, Kim Jaxa-Debicki

ROM: Erling Holm

St. Clair Region CA: Contacted, no response.

Essex Region Conservation Authority: Tom Dufour

Special thanks to Andrew Doolittle of DFO for the production of EO and IAO maps.

Information sources:

Dextrase, A.J., N.E. Mandrak, J. Barnucz, L. Bouvier, R. Gaspardy and S. M. Reid. 2014. Sampling effort required to detect fishes at risk in Ontario. Canadian Manuscript Report of Fisheries and Aquatic Sciences 3024.

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Edwards, A.L. and S.K. Staton. 2009. Management plan for the Blackstripe Topminnow, Pugnose Minnow, Spotted Sucker and Warmouth in Canada. Species at Risk Act Management Plan Series. Fisheries and Oceans Canada, Ottawa. viii + 43 pp.

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Nature Serve. 2013. An Online Encyclopedia of Life: *Minytrema melanops* Nature Serve Explorer. (accessed February 19, 2014)

Page, L.M., B.M. Burr. 2011. Peterson Field Guide to Freshwater Fishes, Second Edition. Houghton Mifflin Harcourt. New York, New York.

Reid, S.M., and N.E. Mandrak. 2006. Evaluation of potential impact of Springbank Dam restoration on Black Redhorse (*Moxostoma duquesnei*) and other Thames River catostomid species. Canadian Technical Report of Fisheries and Aquatic Sciences 2670.

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Wilson, C., E. Wright, J. Bronnenhuber, F. MacDonald, M. Belore and B. Locke. 2014. Tracking ghosts: combined electrofishing and environmental DNA surveillance efforts for Asian carps in Ontario waters of Lake Erie. Management of Biological Invasions 5: 225-231.

TECHNICAL SUMMARY

Minytrema melanops

Spotted Sucker — Meunier tacheté

Range of occurrence in Canada: Ontario

Demographic Information

Generation time (usually average age of parents in the population; indicate if another method of estimating generation time indicated in the IUCN guidelines(2011) is being used)	3 yrs
Is there an [observed, inferred, or projected] continuing decline in number of mature individuals?	Unknown
Estimated percent of continuing decline in total number of mature individuals within [5 years or 2 generations]	Unknown
[Observed, estimated, inferred, or suspected] percent [reduction or increase] in total number of mature individuals over the last [10 years, or 3 generations].	Unknown
[Projected or suspected] percent [reduction or increase] in total number of mature individuals over the next [10 years, or 3 generations].	Unknown
[Observed, estimated, inferred, or suspected] percent [reduction or increase] in total number of mature individuals over any [10 years, or 3 generations] period, over a time period including both the past and the future.	Unknown
Are the causes of the decline a. clearly reversible and b. understood and c. ceased?	a. n/a b. n/a c. n/a
Are there extreme fluctuations in number of mature individuals?	Unknown

Extent and Occupancy Information

Estimated extent of occurrence 6913 km² (2004-2013) 7887 km² (1994-2003) 9276 km² (pre-2004)	6913 km²
Index of area of occupancy (IAO) (Always report 2x2 grid value). It should be noted that the area of occupancy of 1009 km² reported in the 2005 status report was not calculated using a 2x2 grid and included the entire Canadian portion of Lake St. Clair. 159 km² (2004-2014) 168 km² (1994-2003) 259 km² (pre-2004)	159 km²

Is the population "severely fragmented" i.e., >50% of its total area of occupancy is in habitat patches that are (a) smaller than would be required to support a viable population, and (b) separated from other habitat patches by a large distance?	No
Number of locations* (use plausible range to reflect uncertainty)	Unknown but likely >10
Is there an [observed, inferred, or projected] continuing decline in extent of occurrence? Decline based on lack of recent specimens from Lake Erie.	Yes, observed decline.
Is there an [observed, inferred, or projected] continuing decline in index of area of occupancy? The index of area of occupancy since 2003 is about the same as in the previous 10-year period, but is lower than the historical range. Therefore, the decline from historical levels appears not to be continuing.	No
Is there an [observed, inferred, or projected] continuing decline in number of subpopulations? Spotted Sucker is still known from 7 of 11 historical subpopulations in Canada, but specimens have not been collected from 5 historical subpopulations since 2003. The specimens collected in Maxwell (1996), Bear (1997), and Little Bear (2014) creeks, which drain through the same watershed directly into the Chenal Ecarte, should be considered a 12th subpopulation. Unknown if the Essex County locations represent subpopulations or spawning runs of the Detroit River, Lake St. Clair, or Lake Erie subpopulations. Lack of recent Lake Erie records represents a decline in subpopulations but, as this has only occurred during last assessment time period, it is too soon to determine if it is continuing.	Yes
Is there an [observed, inferred, or projected] continuing decline in number of locations*? As the most plausible threat is not clear, the number of locations cannot be determined.	Unknown
Is there an [observed, inferred, or projected] continuing decline in [area, extent and/or quality] of habitat? Habitat continuing to be highly degraded.	Yes, continuing decline.
Are there extreme fluctuations in number of subpopulations?	No
Are there extreme fluctuations in number of locations*?	Unknown
Are there extreme fluctuations in extent of occurrence?	No
Are there extreme fluctuations in index of area of occupancy?	No

* See Definitions and Abbreviations on COSEWIC website and IUCN 2010 for more information on this term.

Number of Mature Individuals (in each subpopulation)

Subpopulation (give plausible ranges)	N Mature Individuals
St. Clair River	Unknown
Lake St. Clair and tributary mouths	Unknown
North Sydenham River	Unknown
Sydenham River	Unknown
Maxwell, Bear, Little Bear creeks	Unknown
Thames River	Unknown
Pike Creek	Unknown
Detroit River	Unknown
Canard River	Unknown
Cedar Creek	Unknown
Lake Erie (western basin)	Unknown
Lake Erie (central basin)	Unknown
Total	NA

Quantitative Analysis

Probability of extinction in the wild is at least [20% within 20 years or 5 generations, or 10% within 100 years]. Not enough data available at this time.	Unknown

Threats (actual or imminent, to populations or habitats)

Threats are not clear but, except for dams, likely remain the same as those in 2005 status report: habitat degradation (pollution), siltation

Rescue Effect (immigration from outside Canada)

Status of outside population(s) most likely to provide immigrants to Canada?	Michigan (S3) Ohio (S4)
Is immigration known or possible?	Yes
Would immigrants be adapted to survive in Canada? Populations on the USA side of the Great Lakes likely share similar genetics and adaptations to those on the Canadian side.	Yes
Is there sufficient habitat for immigrants in Canada?	Yes
Is rescue from outside populations likely?	Yes

Data-Sensitive Species

Is this a data-sensitive species? No

Status History

COSEWIC Status History
Designated Special Concern in April 1983. Status re-examined and confirmed in April 1994, November 2001, May 2005, and November 2014.

Status and Reasons for Designation

Status:	**Alpha-numeric Code**:
Special Concern	Not applicable
Reasons for Designation: This species is a relatively rare fish that inhabits lakes and rivers in southwestern Ontario. Its spatial distribution has remained relatively constant in these environments but there are indications that occurrence has declined in the Lake Erie part of its range. Specific threats are poorly understood, but the species is likely sensitive to high turbidity, which is common in the degraded environments it inhabits. The species may become Threatened if factors suspected of negatively influencing its persistence are neither reversed nor managed effectively.	

Applicability of Criteria

Criterion A (Decline in Total Number of Mature Individuals): Not applicable. Population trends are unknown.
Criterion B (Small Distribution Range and Decline or Fluctuation): Meets the both EO threshold for Threatened and the IAO threshold for Endangered, is close to the threshold for number of locations and is not severely fragmented. The degree of continuing decline in habitat quality is not fully understood.
Criterion C (Small and Declining Number of Mature Individuals): Not applicable. Number of mature individuals is unknown.
Criterion D (Very Small or Restricted Population): Not applicable. Number of mature individuals and number of locations is unknown, and IAO exceeds the threshold.
Criterion E (Quantitative Analysis): None conducted.

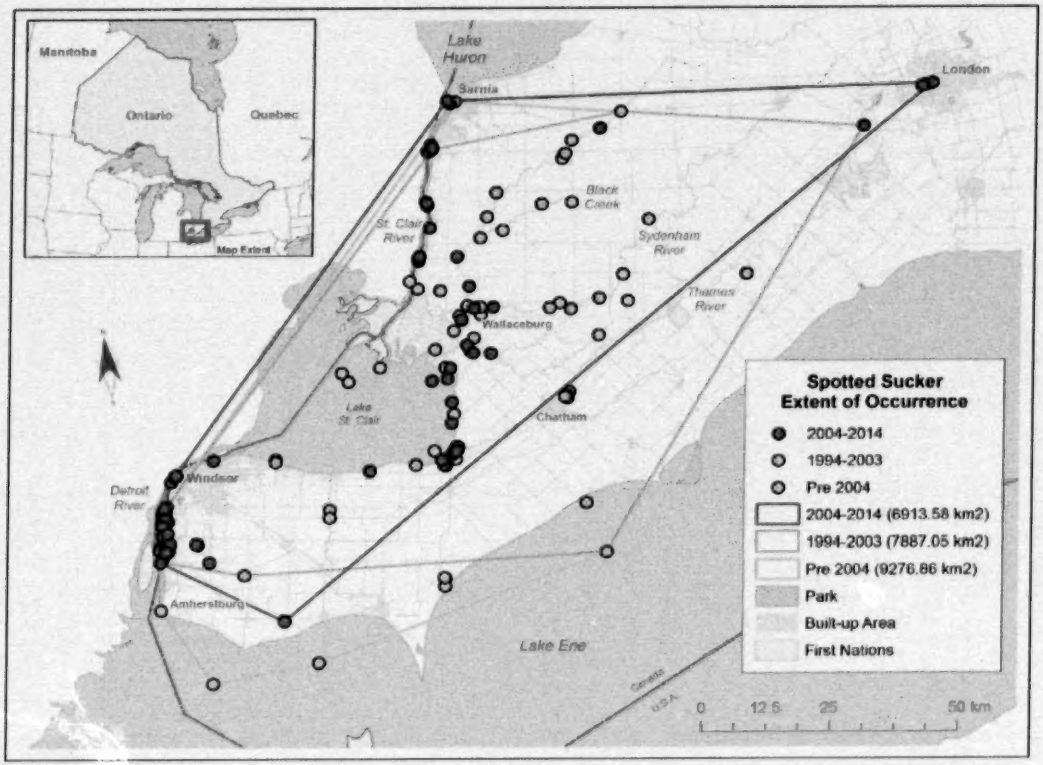

Figure 1. Extent of occurrence of Spotted Sucker, *Minytrema melanops*, in Canada over one current and two historical time periods.

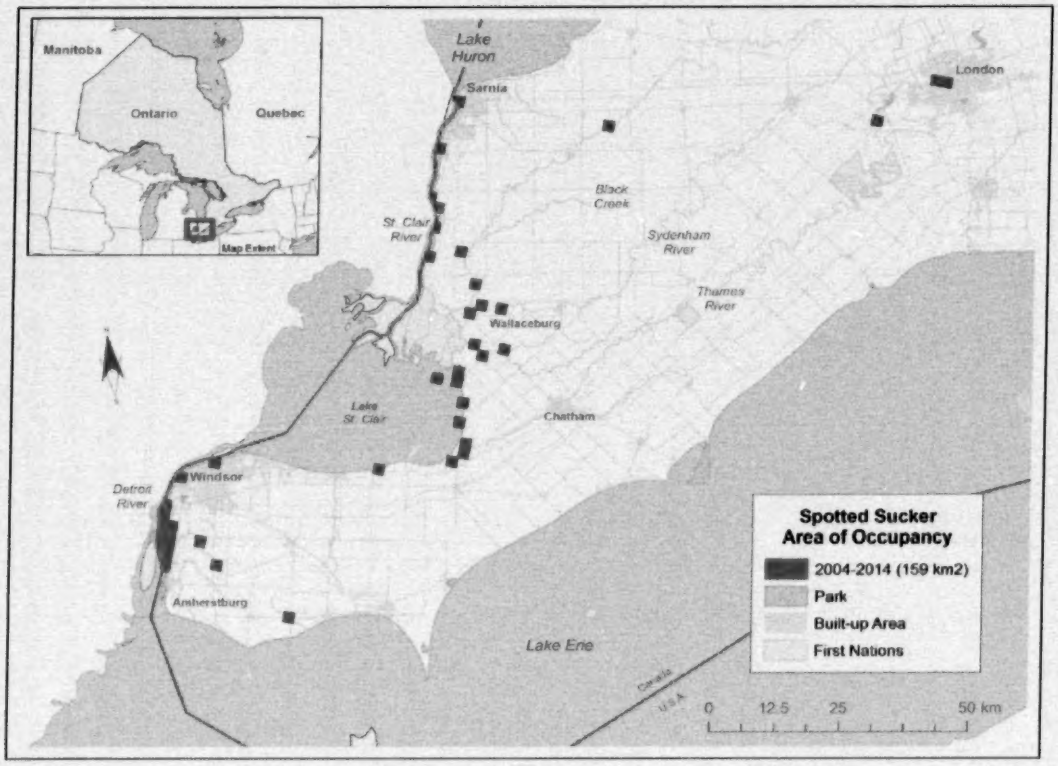

Figure 2. Area of occupancy for Spotted Sucker, *Minytrema melanops*, in Canada, 2004-2014.

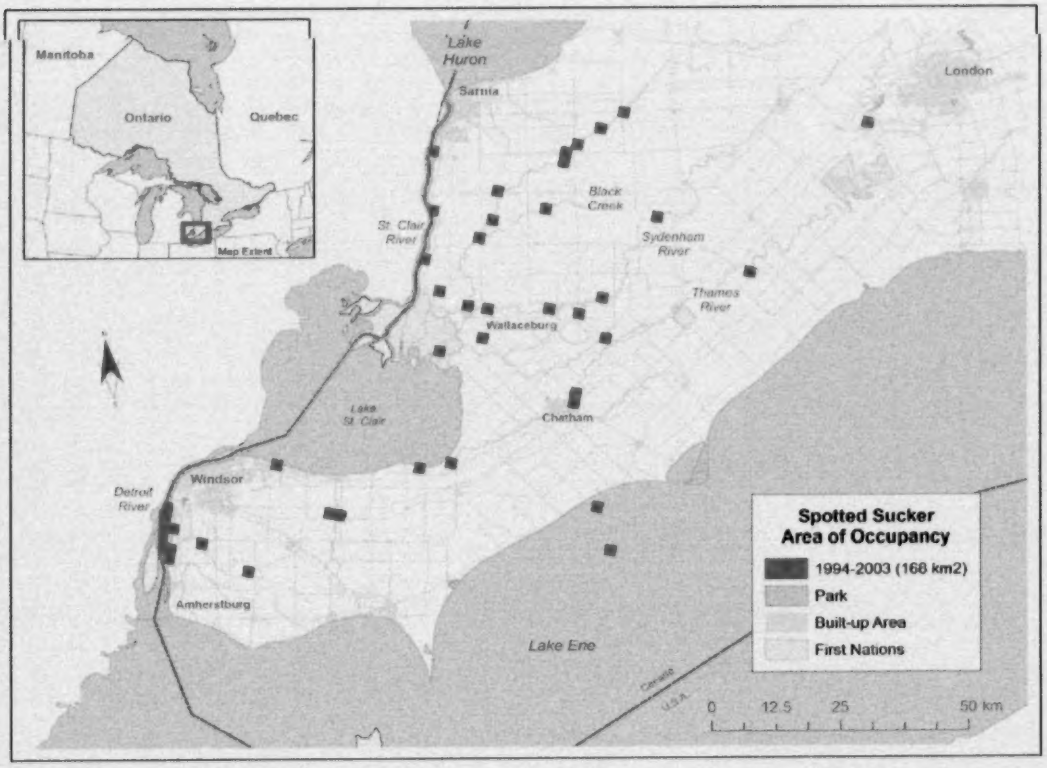

Figure 3. Area of occupancy for Spotted Sucker, *Minytrema melanops*, in Canada, 1994-2003.

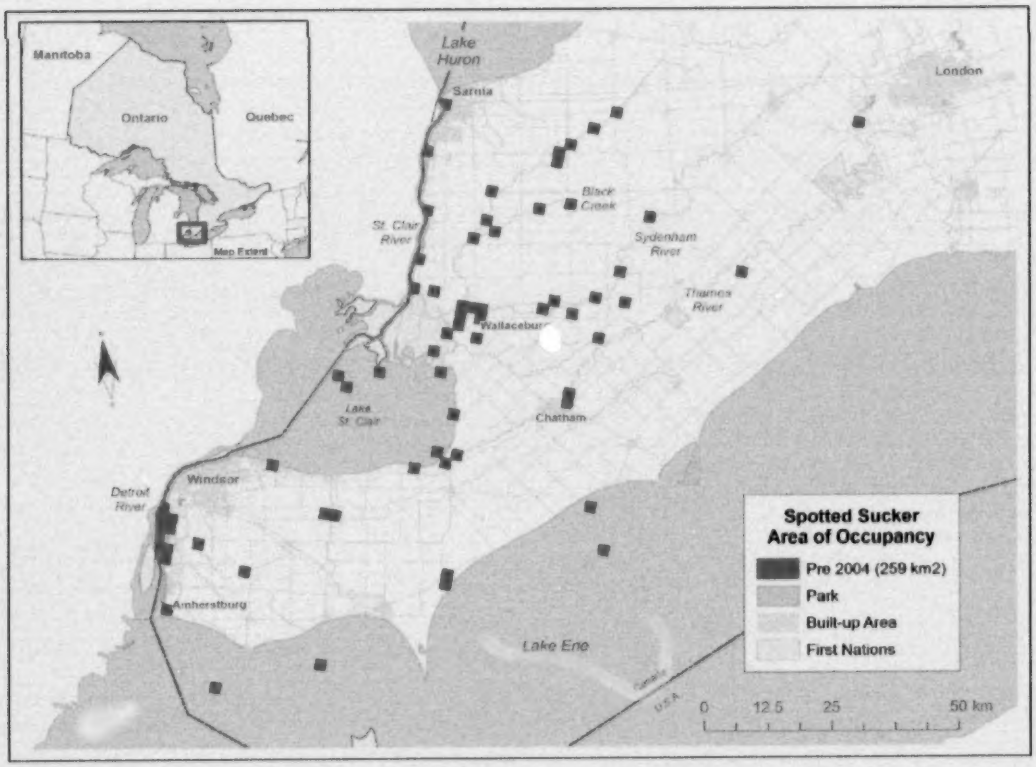

Figure 4. Area of occupancy for Spotted Sucker, *Minytrema melanops*, in Canada, prior to 2004.

COSEWIC HISTORY

The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) was created in 1977 as a result of a recommendation at the Federal-Provincial Wildlife Conference held in 1976. It arose from the need for a single, official, scientifically sound, national listing of wildlife species at risk. In 1978, COSEWIC designated its first species and produced its first list of Canadian species at risk. Species designated at meetings of the full committee are added to the list. On June 5, 2003, the *Species at Risk Act* (SARA) was proclaimed. SARA establishes COSEWIC as an advisory body ensuring that species will continue to be assessed under a rigorous and independent scientific process.

COSEWIC MANDATE

The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) assesses the national status of wild species, subspecies, varieties, or other designatable units that are considered to be at risk in Canada. Designations are made on native species for the following taxonomic groups: mammals, birds, reptiles, amphibians, fishes, arthropods, molluscs, vascular plants, mosses, and lichens.

COSEWIC MEMBERSHIP

COSEWIC comprises members from each provincial and territorial government wildlife agency, four federal entities (Canadian Wildlife Service, Parks Canada Agency, Department of Fisheries and Oceans, and the Federal Biodiversity Information Partnership, chaired by the Canadian Museum of Nature), three non-government science members and the co-chairs of the species specialist subcommittees and the Aboriginal Traditional Knowledge subcommittee. The Committee meets to consider status reports on candidate species.

DEFINITIONS
(2014)

Wildlife Species	A species, subspecies, variety, or geographically or genetically distinct population of animal, plant or other organism, other than a bacterium or virus, that is wild by nature and is either native to Canada or has extended its range into Canada without human intervention and has been present in Canada for at least 50 years.
Extinct (X)	A wildlife species that no longer exists.
Extirpated (XT)	A wildlife species no longer existing in the wild in Canada, but occurring elsewhere.
Endangered (E)	A wildlife species facing imminent extirpation or extinction.
Threatened (T)	A wildlife species likely to become endangered if limiting factors are not reversed.
Special Concern (SC)*	A wildlife species that may become a threatened or an endangered species because of a combination of biological characteristics and identified threats.
Not at Risk (NAR)**	A wildlife species that has been evaluated and found to be not at risk of extinction given the current circumstances.
Data Deficient (DD)***	A category that applies when the available information is insufficient (a) to resolve a species' eligibility for assessment or (b) to permit an assessment of the species' risk of extinction.

* Formerly described as "Vulnerable" from 1990 to 1999, or "Rare" prior to 1990.

** Formerly described as "Not In Any Category", or "No Designation Required."

*** Formerly described as "Indeterminate" from 1994 to 1999 or "ISIBD" (insufficient scientific information on which to base a designation) prior to 1994. Definition of the (DD) category revised in 2006.

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